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| EXAMINER |
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YAARY, MICHAEL D

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| ART UNIT | PAPER NUMBER |
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2193

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/22/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/721,658 | Applicant(s) O'NEILL ET AL. | |
| | Examiner Michael Yaary | Art Unit 2193 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>05/10/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. Claims 1-21 are pending in the application.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. As to claims 1-5 the claims are rejected under 35 U.S.C. 101, as the claims are directed to non-statutory subject matter.

- (i) As to claims 1-5 they are non-statutory as the system is software per se, as it is not tangibly embodied, failing to recite any hardware as part of the apparatus.

- (ii) As to claims 1-5 the claims are non-statutory as they fail to produce a "useful, concrete, and tangible result." *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 1373-74 (Fed. Cir. 1998). The claims are directed to nothing more than using a technique to manipulate bank order. The claims fail to provide a useful, concrete, and tangible result using the output, and thus fail to indicate how the invention accomplishes a practical application.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3, 5, 7-16, 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

(i) The claims are directed towards terms and techniques such as, "differential evolution, genetic computation, genomes, population of genomes, adding seeds to the population, mutated genomes, elite genomes, and mated genomes. The specification provides no further detail than identifying these terms and their use in the different embodiments of the invention. There are no definitions as to how the biotech related terms are to be defined, and interpreted within the scope of the invention, thus lacking enablement to one of ordinary skill in the art.

6. Claims 19 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(i) Claims 19(line 2) and 20(line 2) are directed to "verification information" and "authentication," respectively. There is no support for these limitations found in the specification.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 3, 4, 6, 7, and 17 are rejected under U.S.C 112, second paragraph, as the claims are unclear as to the claimed subject matter.

(i) As to claim 1(lines 5-6), the claim is unclear as to how and under what criteria a differential evolution technique is "selectively" employed.

(ii) As to claim 3(lines 1-4), the claim is unclear at to what the "additional" and other "additional parameters" are in addition to, as well as, what is considered to be "optimum" with relation to the optimum values.

(iii) As to claim 4(line 2-3), the claim is unclear as to what types of instructions are being referred to, as the claim is not defining the abbreviations used.

(iv) As to claim 6(line 4), the claim is unclear as to how and what the bank order is used for. Does the bank order contain the firmware or software? What in fact is the content of the bank order that is used for generating difference information?

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- (v) As to claim 7(line 2), the claim is unclear as to what an optimal bank order is considered to be.
- (vi) As to claim 17(lines 3-5), the claim is unclear as to what are the generation parameters and what they are used for. Are they directly incorporated with a bank order, or are they directed towards generating the update package?

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-4, 6, 17-19, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang (US Pub. 2004/0040020).
11. As to **claim 1**, Yang discloses generating difference information between a first binary image of an electronic device and a second binary image of an electronic device ([0026], lines 1-7), the system comprising:

A bank order determination unit adapted to selectively employ at least one differential evolution technique to determine the bank order (Differential evolution

technique is interpreted as being a generic term applied to the different types of techniques which can determine a bank order, thus referring to page 4 [0032], line 1- page 5, [0035], line 32, disclosed is a technique used for determining bank order in which specific bank order is used, thus employing at least one of a possible many types of techniques to determine bank order.).

12. **As to claim 2**, Yang discloses the first binary image and the second binary image comprise at least one of firmware and software in memory banks of the electronic device ([0025], lines 5-13) and the bank order determination unit being adapted to employ genomes to represent bank orders of memory banks of the electronic device ([0034], lines 1-7, genomes is interpreted as being specifications that represent different bank orders.).

13. **As to claim 3**, Yang discloses the bank order determination unit is also adapted to employ genomes to represent other additional parameters ([0034], lines 1-29) and wherein the system is also adapted to determine optimum values for the bank order and other additional parameters ([0035], lines 18-20) employing the at least one differential evolution technique.

14. **As to claim 4**, Yang discloses the other additional parameters are selected from instructions associated with at least one of RLE instructions, CPY instructions, and DUP instructions ([0035], lines 12-17 disclose CPY, copy instructions.)

15. **As to claim 6**, Yang discloses a method for generating an update package comprising at least one difference information adapted to be employed to update at least one of firmware and software in an electronic device (abstract and [0026], lines 1-7), the method comprising:

Determining a bank order for generation of difference information ([0008], lines 1-3).

Employing the bank order to generate the update package and also to update the at least one of firmware and software in the electronic device ([0012], lines 1-13 and [0014], lines 1-6).

16. **As to claim 17**, Yang discloses a method of generating an update package for updating at least one of firmware and software in a mobile handset ([0022], lines 1-3), the method comprising:

Determining a bank order ([0008], lines 1-3 and [0032], lines 1-16);

Optionally determining values for generation parameters ([0035], lines 18-20);

Generating the update package incorporating the bank order ([0012], lines 1-13 and [0014], lines 1-6).

17. **As to claim 18**, Yang discloses determining a bank order employing at least one genetic evolution technique (Page 4 [0032], line 1- page 5, [0035], line 32 disclose a technique used for determining bank order in which specific bank order is used, thus

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interpreted as being a genetic evolution technique.); determining values for generation parameters employing the at least one genetic evolution technique ([0035], lines 18-20); and generating the update package incorporating the bank order ([0012], lines 1-13 and [0014], lines 1-6).

18. **As to claim 19**, Yang discloses incorporating verification information in a generated update package facilitating integrity checking in a mobile handset receiving the generated package ([0031], lines 8-12 disclose verifying the success of the update.).

19. **As to claim 21**, Yang discloses incorporating information in a generated update package facilitating fault tolerant update in a mobile handset receiving the update package ([0011], lines 21-26).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of Waldin et al. (hereafter Waldin)(US Pat. 6,651,249).

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22. **As to claim 20**, Yang does not disclose incorporating authentication information in a generated update package facilitating authentication of a source of the generated update package in a mobile handset receiving the generated update package.

However, Waldin discloses incorporating authentication information in a generated update package facilitating authentication of a source of the generated update package in a mobile handset receiving the generated update package (column 4, lines 48-54).

23. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Yang, by including authentication of the update package source, as taught by Waldin, for the benefit of verifying that the update packages have not been altered.

Allowable Subject Matter

24. Claims 5 and 7-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

25. Claims 5 and 7-16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 112, 1st and 2nd paragraphs, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

This Office action has an attached requirement for information under 37 C.F.R. § 1.105. A complete response to this Office action must include a complete response to the attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Yaary whose telephone number is (571) 270-1249. The examiner can normally be reached on Monday-Friday, 8:00 a.m - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER

REQUIREMENT FOR INFORMATION

37 CFR 1.105

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

The information is required to extend the domain of search for prior art. Limited amounts of art related to the claimed subject matter are available within the Office, and are generally found in class 717 and subclasses 168-178, which describe upgrading and installation of software/firmware. A broader range of art to search is necessary to establish the level of knowledge of those of ordinary skill in the claimed subject matter art of differential evolution techniques employing genomes in an a software/firmware upgrading environment.

The information is required to document the level of skill and knowledge in the art of upgrading software/firmware employing differential evolution/genetic computation techniques.

The information is required to complete the background description in the disclosure by documenting, defining and explaining terms, and fully describing the relation between differential evolution/genetic computation techniques and how they are incorporated in providing software/firmware update packages. Applicant is requested to

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provide any documentation clarifying terms relating to differential evolution/genetic computation and undefined in the specification. Applicant is requested to provide documentation or references pertaining to using genetic/evolution techniques in the upgrading software/firmware art.

In response to this requirement, please provide a list of citations to electronically searchable databases or other indexed collections containing publications that document the knowledge within the disclosed art of software/firmware updates employing evolution/genetic computation.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete response to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete response to the enclosed Office action must include a complete response to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action, which is 3 months.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Yaary whose telephone number is (571) 270-1249. The examiner can normally be reached on Monday-Friday, 8:00 a.m - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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